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(54) **Safety system for a closed compartment of a vehicle**

(57) A safety sensing and/or release assembly (10) for a trunk or compartment of a vehicle is provided which is positionable within the trunk or compartment space of the vehicle so as to allow for opening of the trunk or compartment lid (16) in response to an occupant detection or a manual actuation of the system from within the trunk or compartment (18). The safety assembly comprises a handle (12) for activating a release mechanism (14) of the lid (16) in order to open the compartment (18), a release assist device (84), at least one illumination source (46), which is at least occasionally activated to provide illumination of the handle (12), and a control (48) for activating the assist device (84) or the illumination source (46) in response to an occurrence of at least one activating event such as when the deck lid is closed, motion is sensed by a sensor (66,68) within the trunk/compartment, an object having a predetermined temperature is detected within the trunk/compartment, or the like. The assist device (84) is operable to activate the handle (12) or the release mechanism (14) to ease the opening of

the trunk or to automatically open the trunk in response to the control, and may be electrically powered, mechanically powered or gas powered. The control is operable to activate the illumination source (46) for a period of time following occurrence of at least one activating event, and subsequently to deactivate the illumination source upon completion of that time period. The handle (12) of the present invention is designed for easy visibility in minimal lighting conditions and easy recognition even by a young child who may become trapped within the trunk space of the vehicle. This allows easy recognition and activation of the handle (12) and release mechanism (14) of the lid of the vehicle compartment in order to escape from within a trunk space. The system may be operable to sense ambient conditions in the vehicle compartment, and generates a control signal in response to the sensed conditions. This control signal actuates indicators to notify operators of the vehicle that there is a person trapped in the trunk. The control signal is also used to actuate a lamp inside the trunk to provide

light for the trapped person. A trunk release is also actuated, by a control module, to free the trapped person. The trunk release of the automobile can be prevented

from being actuated if the automobile is moving, which prevents the trunk lid from unexpectedly opening while the vehicle is in motion.

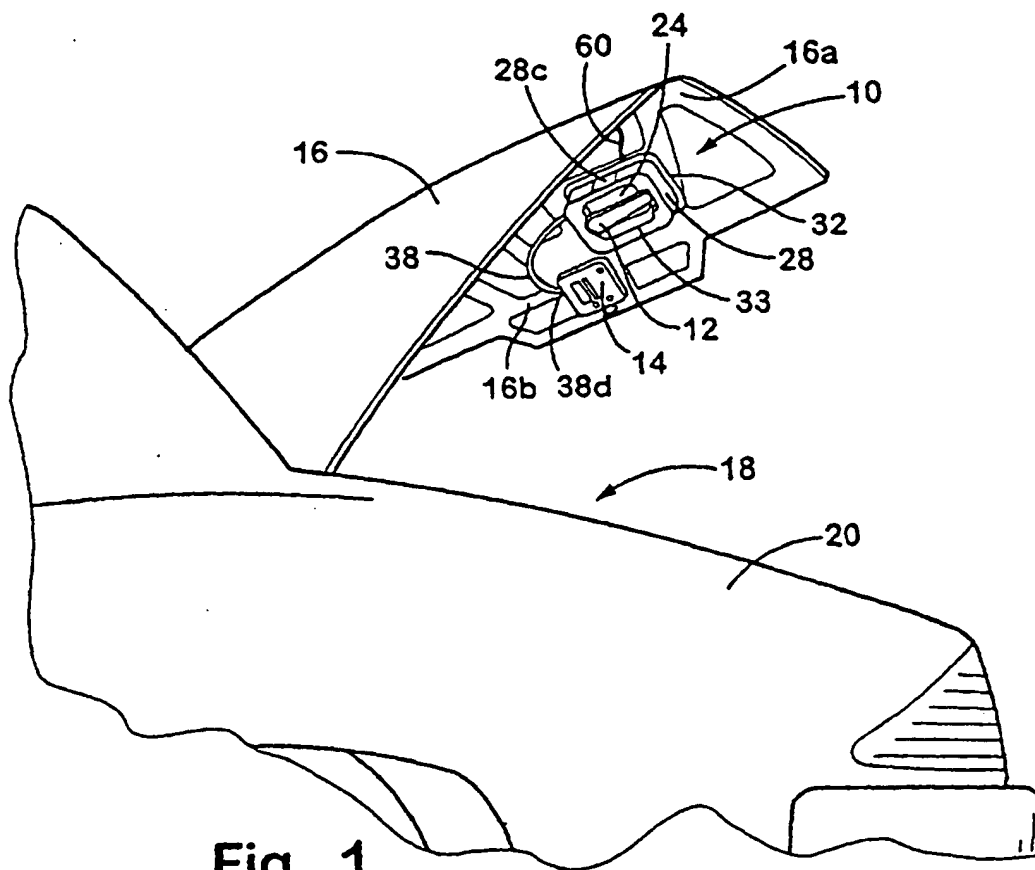


Fig. 1

EUROPEAN SEARCH REPORT

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

1-10



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LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 00 65 0023

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-10

Apparatus for controlling the status of a compartment of a vehicle comprising a sensor, a controller and a mechanism.

2. claims: 11-25

Apparatus situated within a compartment and adapted for use in opening a deck lid of a vehicle comprising a release mechanism adapted for operation from the interior of the compartment.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 65 0023

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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10-08-2004

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9904119	A	28-01-1999	AU 8463898 A	10-02-1999
			CN 1239530 T	22-12-1999
			JP 2000503738 T	28-03-2000
			JP 3194970 B2	06-08-2001
			WO 9904119 A1	28-01-1999

JP 10278564	A	20-10-1998	NONE	

WO 9836950	A	27-08-1998	US 5893582 A	13-04-1999
			US 5967549 A	19-10-1999
			DE 69815504 D1	17-07-2003
			DE 69815504 T2	29-04-2004
			EP 0961720 A1	08-12-1999
			JP 2002513356 T	08-05-2002
			WO 9836950 A1	27-08-1998
			US RE37466 E1	11-12-2001

US 5653386	A	05-08-1997	NONE	

US 5693943	A	02-12-1997	NONE	

US 5554912	A	10-09-1996	NONE	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82